Application No. 09/825,159
Reply to Office Action dated February 10, 2004

Amendments to the Specification:

Please amend the paragraph beginning at line 4 of page 1 as follows:

This application is a continuation-in-part of U.S. Patent Application No. 09/216,193 (Attorney Docket No. 29443-8001), filed December 18, 1998 and entitled "Method and System for Controlling Presentation of Information to a User Based on the User's Condition"; of U.S. Patent Application No. 09/464,659 (Attorney Docket No. 29443-8003), filed December 15, 1999 and entitled "Storing and Recalling Information to Augment Human Memories"; and of U.S. Patent Application No. 09/724,902 (Attorney Docket No. 29443-8002), filed November 28, 2000 and entitled "Dynamically Exchanging Computer User's Context," which claims the benefit of provisional U.S. Patent Application No. 60/194,006 filed April 2, 2000. Each of these applications are hereby incorporated by reference in their entirety.

Please amend the paragraph beginning at line 14 of page 1 as follows:

This application also claims the benefit of provisional U.S. Patent Application No. 60/193,999 (Attorney Docket # 29443-8008), filed April 2, 2000 and entitled "Obtaining And Using Contextual Data For Selected Tasks Or Scenarios, Such As For A Wearable Personal Computer," and of provisional U.S. Patent Application No. 60/194,123 (Attorney Docket # 29443-8024), filed April 2, 2000 and entitled "Supplying And Consuming User Context Data," both of which are hereby incorporated by reference in their entirety.

Please amend the paragraph beginning at line 25 of page 9 as follows:

Such a context model can include a variety of attributes that represent information about the user and the user's environment at varying levels of abstraction. For example, information about the user at a low level of abstraction can include raw physiological data (e.g., heart rate and EKG) and geographic information (e.g., location and speed), while higher levels of abstraction may attempt to characterize or predict the user's physical activity (e.g., jogging or talking on a phone), emotional state (e.g., angry or puzzled), desired output behavior for different types of information (e.g., to present private family information so that it is perceivable only to the user and the user's family members), and cognitive load (i.e., the amount of attention required for the user's current activities). Background information which changes rarely or not at all can also be included, such as the user's age, gender and visual acuity. The model can similarly hold

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environment information at a low level of abstraction, such as air temperature or raw data from a motion sensor, or at higher levels of abstraction, such as the number and identities of nearby people, objects, and locations. The model of the current context can additionally include information added explicitly from other sources (*e.g.*, application programs), as well as user-specified or system-learned defaults and preference information. An illustrative example of a context model containing user and environment information is described in greater detail in U.S. Patent Application No. 09/216,193 ~~(Attorney Docket No. 29443-8001)~~, filed December 18, 1998 and entitled "Method and System for Controlling Presentation of Information to a User Based on the User's Condition."

Please amend the paragraph beginning at line 17 of page 13 as follows:

In addition to information related directly to the user, the characterization system 100 also receives and uses information related to the environment surrounding the user. For example, devices such as microphones or motion sensors may be able to detect whether there are other people near the user and whether the user is interacting with those people. Sensors can also detect environmental conditions which may affect the user, such as air thermometers, Geiger counters, chemical sensors (*e.g.*, carbon monoxide sensors), etc. Sensors, either body-mounted or remote, can also provide information related to a wide variety of user and environment factors including location, orientation, speed, direction, distance, and proximity to other locations (*e.g.*, GPS and differential GPS devices, orientation tracking devices, gyroscopes, altimeters, accelerometers, anemometers, pedometers, compasses, laser or optical range finders, depth gauges, sonar, etc.). Identity and informational sensors (*e.g.*, bar code readers, biometric scanners, laser scanners, OCR, badge readers, etc.) and remote sensors (*e.g.*, home or car alarm systems, remote camera, national weather service web page, a baby monitor, traffic sensors, etc.) can also provide relevant environment information. All of the above items of information may be used to generate attribute values by context servers. Information regarding storing and retrieving environmental information may be found in U.S. Patent Application No. 09/464,659 ~~(Attorney Docket No. 29443-8003)~~, filed December 15, 1999 and entitled "Storing and Recalling Information to Augment Human Memories."

Please amend the paragraph beginning at line 19 of page 18 as follows:

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      Context clients and servers inform the CM of their intent to communicate attributes through a registration process. This registration process provides the CM with a way to monitor attribute dependencies, to notify participating modules of specific events, and to establish precedents. Further details on interaction between context clients, servers and the CM may be found in U.S. Patent Application No. 09/541,328 (Attorney Docket No. 29443-8005), entitled "Interface for Exchanging Context Data" and filed April 2, 2000. Once context clients have registered their intent to examine or receive attributes, such clients may create event handlers so that they receive notification from the CM when attributes change in specific ways, such as exceeding a predetermined threshold. Further details on event and condition-driven attribute creation/supply may be found in U.S. Patent Application No. 09/724,892 (Attorney Docket No. 29443-8004), filed November 28, 2000 and entitled "Automated Response To Computer User's Context." Further details on the CM supplying attributes for user context data, and employing such data may be found in U.S. Patent Application Nos. 09/724,902, 09/724,893, 09/724,777, 09/724,894, 09/724,949, and 09/724,799, (attorney docket nos. 29443-8002, 29443-8018, 29443-8019, 29443-8020, 29443-8022, and 29443-8023) and entitled "Dynamically Exchanging Computer User's Context," "Supplying Enhanced Computer User's Context Data," "Requesting Computer User's Context Data," "Managing Interactions Between Computer Users' Context Models," "Supplying Notifications Related To Supply And Consumption Of User Context Data," and "Generating And Supplying User Context Data" respectively, and all filed November 28, 2000.

Please amend the paragraph beginning at line 10 of page 19 as follows:

      A context client may request an attribute that more than one context server provides. Each contributing context server is said to provide an instance of an attribute. The context client may either specify the preferred server/instance, or it may ask the CM to mediate the multiple attribute instances. The mediation process involves implementing one of several defined strategies for evaluating the instances and sending a resulting aggregate or representative instance of an attribute to the requesting client. These strategies are referred to as attribute mediators. As shown in Figure 2, the CM 230 includes a mediate process 240 which receives heart rate attributes from the two heart rate CSes 220. The mediate process 240 may select between such two heart rate attributes, such as to select the most accurate (e.g., the one produced from the EKG sensor 204) or the newest, or may average between such attributes. Further details

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on such a mediation process may be found in U.S. Patent Application No. 09/724,932 (Attorney Docket No. 29443-8017), entitled "Mediating Conflicts In Computer User's Context Data" and filed November 28, 2000.

Please amend the paragraph beginning at line 19 of page 25 as follows:

A CC may request from the CM a value of an attribute within a thematic set. Such a request includes the following: a name, source, attribute mediator, age and timeout. The name represents a string that identifies the attribute. The source is the name of the CS that is to provide the attribute value. If no source is specified, then the CM assumes the attribute value may come from any source, and if necessary it uses an attribute mediator in the CM to select one. As noted above, the attribute mediator is the name of the selection method that the CC would like the CM to use when selecting one of multiple attribute instances. If no attribute mediator is provided, a default method is used. The age is an expression of the maximum age of the attribute value. If the request is made for a specific attribute instance through specification of a source, then only that instance is checked, and if that attribute value is too old it is freshened by a request from the CM to the CS for a new attribute instance value. If multiple instances are present and a source is not specified, the CM applies an attribute mediator to those attributes whose values satisfy the age requirement. If no values satisfy the age requirement, all instances of the attribute are freshened prior to the application of the attribute mediator. The timeout is a period within which the CM shall return the attribute. Attributes may also be requested periodically; further details may be found in U.S. Patent Application No. 09/541,326 (Attorney Docket No. 29443-8007), entitled "Logging and Analyzing Computer User's Context Data" and filed April 2, 2000.